Claims

What is claimed is:

1 A laser collimator for substantially collimating a beam of light, comprising:
an optical fiber having a cladding bounding a core, said optical fiber having an input end for receiving laser light and a slanted output end for transmitting said light;
a lens for substantially collimating an input beam of light received from the output end of the optical fiber;
a light transmissive element so located and oriented between the optical fiber output end and the lens for correcting an angular deviation in the beam of light exiting the slanted output end.

2. A laser collimator as defined in claim 1, comprising an optical fiber sleeve holding the optical fiber, wherein the optical fiber sleeve and the optical fiber have parallel longitudinal axes and coplanar end surfaces, said end surfaces at a slant with respect to a plane perpendicular to said longitudinal axes.

3. A laser collimator as defined in claim 2, wherein the light transmissive element is a wedge.

4. A laser collimator as defined in claim 3 wherein the wedge has a slanted surface that is substantially parallel with and facing slanted end surface of the optical fiber.

5. A laser collimator as defined in claim 4 wherein the wedge has an output end surface opposite the slanted surface that is substantially normal to the longitudinal axis of the optical fiber sleeve.

6. A laser collimator as defined in claim 5, wherein the wedge and the sleeve are held securely within an outer sleeve, and wherein the lens and the outer sleeve are relatively immovable.

7. A laser collimator as defined in claim 6, wherein the lens is one of
affixed to an end of the outer sleeve; and,
held securely within the sleeve.

8. A laser collimator as defined in claim 1, wherein the light transmissive element has two non-parallel surfaces, and wherein the element has a refractive index that is substantially equal to the refractive index of the optical fiber core.

9. A laser collimator as defined in claim 1, wherein the optical fiber output end has a numerical aperture greater than the numerical aperture of the input end.

10. A laser collimator as defined in claim 1 wherein the optical fiber core about the output end that has a diameter of less than the core about the input end for lessening the mode field diameter of a beam exiting the output end and increasing the numerical aperture of the fiber to thereby increase divergence of said exiting beam.

11. A laser collimator as defined in claim 2, wherein the light transmissive element is substantially absent optical power.

12. A laser collimator for substantially collimating a beam of light, comprising:

an optical fiber having a cladding bounding a core, said optical fiber having an input end for receiving laser light and a slanted output end for transmitting said light;

an optical fiber sleeve holding the optical fiber, wherein the optical fiber sleeve and the optical fiber have parallel longitudinal axes and coplanar end surfaces, said end surfaces at a slant with respect to a plane perpendicular to said longitudinal axes;

a lens for substantially collimating an input beam of light received from the output end of the optical fiber;

a light transmissive element having a first light receiving face and an opposed light transmitting face, said receiving and transmitting faces being non-parallel, the light transmissive element so located and oriented between the optical fiber output end and the lens so as to correct an angular deviation in the beam of light exiting the slanted output end; and, a laser optically coupled with the input end of the optical fiber.

13. A laser collimator as defined in claim 13, wherein the laser includes a pigtailed optical fiber for coupling with the optical fiber, and wherein the light transmissive element is a wedge having essentially no optical power.